



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,340	08/21/2000	Thomas Gray	8673-108 (8061-505 SJP/rs)	8168
22150	7590	10/21/2004	EXAMINER BRUCKART, BENJAMIN R	
F. CHAU & ASSOCIATES, LLC 130 WOODBURY ROAD WOODBURY, NY 11797			ART UNIT 2155	PAPER NUMBER

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/642,340	Applicant(s) GRAY ET AL.	
	Examiner Benjamin R Bruckart	Art Unit 2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

Status of Claims:

Claims 1-26 are pending in this Office Action.

Claims 1-26 remain rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,974,420 by Lehman et al in view of U.S. Patent No. 5,924,103 by Ahmed et al ("Ahmed").

Response to Arguments

Applicant's amendment and arguments filed on 6-28-04 have been fully considered but they are not persuasive and are moot in view of the new grounds of rejection. See remarks below

Applicant's invention as claimed:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,974,420 by Lehman et al in view of U.S. Patent No. 5,924,103 by Ahmed et al ("Ahmed").

Regarding claim 1,

The Lehman reference teaches with regards to claim 1, a system for controlling and coordinating activities among entities in an information and process environment comprising (Lehman: col. 3, lines 21-30):

a) a communications pathway for transmitting and receiving communications of said entities (Lehman: col. 2, line 4; col. 3, lines 61-67); and

b) a shared memory connected to said communications pathway for maintaining a tuple space (Lehman: col. 1, lines 12-13) on which said entities post and receive messages (Lehman: col. 3, lines 5-31).

The Lehman reference does not explicitly state the use of discrete time intervals.

The Ahmed reference teaches said tuple space synchronized with a clock that defines discrete time intervals as reference points for operations on said tuple space (Ahmed: col. 5, lines 24-38; clock is the system clock, reference points are start, end, and now).

The Ahmed reference further teaches the start and end times indicate a time interval in which the tuple contains current information (Ahmed: col. 5, lines 24-38)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create a system for information controlling and exchange as taught by Lehman while employing discrete time intervals as taught by Ahmed to maintain tuples with a temporal attribute to maintain current information (Ahmed: col. 5, lines 24-28).

Claims 2-8 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Lehman et al and Ahmed et al.

Regarding claim 2, the system of claim 1 wherein said messages are in the form of tuples (Lehman: col. 1, lines 24-25) and anti-tuples (Lehman: col. 1, line 27) (Lehman: col. 2, lines 25, 26).

Regarding claim 3, the system of Claim 1, wherein said entities include at least one entity that asserts a tuple on said tuple space signaling its intention to perform an action (Lehman: col. 2, lines 6, 7) and asserts and anti-tuple on said tuple space for evaluating outcomes of said

intention (Lehman: col. 1, lines 24-35); and at least at one further entity which asserts an anti-tuple for detecting said intentions (Lehman: col. 2, lines 7 and 8).

Regarding claim 4, the system of Claim 3, wherein said tuples include a duration parameter for limiting the duration thereof in said tuple space (Lehman: col. 5, lines 35-43; Ahmed: col. 5, line 25; "end time").

Regarding claim 5, the system of claim 4 wherein said duration parameter is a multiple of said discrete time intervals (Ahmed: col. 5, lines 24-38).

Regarding claim 6, the system of claim 5 wherein said tuples are removed from said tuple space after said duration has elapsed (Ahmed: col. 5, lines 30-38).

Regarding claim 7, the system of claim 1 wherein said entities are hardware devices (Lehman: col. 4, lines 10-15 and 37-41).

Regarding claim 8, the system of claim 1 wherein said communication pathway is a network or bus (Lehman: col. 4, lines 15, 16).

Regarding claim 9,

The Lehman reference teaches, a method for controlling and coordinating activities among entities in an information and process environment comprising the steps of (Lehman: col. 3, lines 21-30):

a) providing a communications pathway for transmitting and receiving communications of said entities (Lehman: col. 2, line 4; col. 3, lines 61-67);

b) providing a tuple space in a shared memory (Lehman: col. 1, lines 12-13), and connected to said communications pathway (Lehman: col. 1, lines 12-13; col. 2, lines 4-8; col. 3, lines 64-66); and

c) posting and receiving messages of said entities to and from said tuple space synchronized automatically (Lehman: col. 2, lines 4-8; col. 1, lines 12 and 13).

The Lehman reference does not explicitly state the use of discrete time intervals.

The Ahmed reference teaches a tuple space synchronized with a clock for operation in discrete time intervals, used as reference points (Ahmed: col. 5, lines 24-38; clock is the system clock, reference points are start, end, and now).

The Ahmed reference further teaches the start and end times indicate a time interval in which the tuple contains current information (Ahmed: col. 5, lines 24-38)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create a system for information controlling and exchange as taught by Lehman while employing discrete time intervals as taught by Ahmed to maintain tuples with a temporal attribute to maintain current information (Ahmed: col. 5, lines 24-28).

Claims 10-17 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Lehman et al and Ahmed et al.

Regarding claim 10, the method of claim 9 wherein said messages are in the form of tuples (Lehman: col. 1, lines 24-25) and anti-tuples (Lehman: col. 1, line 27) (Lehman: col. 2, lines 25, 26).

Regarding claim 11, the method of Claim 9, wherein said entities include at least one entity that asserts a tuple on said tuple space signaling its intention to perform an action (Lehman: col. 2, lines 6, 7) and asserts and anti-tuple on said tuple space for evaluating outcomes of said intention (Lehman: col. 1, lines 24-35); and at least at one further entity which asserts an anti-tuple for detecting said intentions (Lehman: col. 2, lines 7 and 8).

Regarding claim 12, the method of Claim 11, wherein said tuples include a duration parameter for limiting the duration thereof in said tuple space (Lehman: col. 5, lines 35-43; Ahmed: col. 5, line 25; "end time").

Regarding claim 13, the method of claim 12 wherein said duration parameter is a multiple of said discrete time intervals (Ahmed: col. 5, lines 24-38).

Regarding claim 14, the method of claim 13 wherein said tuples are removed from said tuple space after said duration has elapsed (Ahmed: col. 5, lines 30-38).

Regarding claim 15, the method of claim 9 wherein said entities are hardware devices (Lehman: col. 4, lines 10-15 and 37-41).

Regarding claim 16, the method of claim 9 wherein said communication pathway is a network or bus (Lehman: col. 4, lines 15, 16).

Regarding claim 17,

The Lehman reference teaches a method of call processing comprising the steps of (Lehman: col. 1, lines 58-60; col. 4, lines 23-31; 55- col. 6, line 11):

a) providing entities representative of call processing features (Lehman: col. 1, lines 58-60; col. 4, lines 23-31; 55- col. 6, line 11);

b) providing a communications pathway for transmitting and receiving communications of said entities (Lehman: col. 2, line 4; col. 3, lines 61-67);

c) providing a tuple space in a shared memory (Lehman: col. 1, lines 12-13), and connected to said communications pathway (Lehman: col. 1, lines 12-13; col. 2, lines 4-8; col. 3, lines 64-66);

d) before taking an action, a first of said entities desirous of taking said action requesting advice of other said entities by posting intention messages on said tuple space to said other entities through said pathway (Lehman: col. 6, lines 30-35; client submits a blocking call is not taking an action, its waiting for an event);

e) in response to said intention messages, said other entities providing advice as desired by posting responding messages on said tuple space to said first of said entities (Lehman: col. 6, lines 20-41; col. 5, lines 12-24; written by another process);

f) said first of said entities evaluating said responding messages, if any (Lehman: col. 6, lines 30-35; checks if condition met); and

g) said first of said entities taking advised action after said evaluating said responding message (Lehman: col. 6, lines 20-30; read, write or take action performed).

The Lehman reference does not explicitly state the use of discrete time intervals.

The Ahmed reference teaches a tuple space synchronized with a clock for operation in discrete time intervals using time intervals as reference points (Ahmed: col. 5, lines 24-38; clock is the system clock, reference points are start, end, and now).

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create a system for information controlling and exchange as taught by Lehman while employing discrete time intervals as taught by Ahmed to maintain tuples with a temporal attribute to maintain current information (Ahmed: col. 5, lines 24-28).

Claims 18-25 are rejected under the same rationale given above. In the rejections set fourth, the examiner will address the additional limitations and point to the relevant teachings of Lehman et al and Ahmed et al.

Regarding claim 18, the method of claim 17 wherein said advised action ignores or overrides said responding messages (Lehman: col. 1, lines 24-35; Table 1; col. 1, lines 58-61 where it is depending on the match of the tuple and the data found).

Regarding claim 19, the method of claim 17 wherein said messages and said responding messages are in the form of tuples (Lehman: col. 1, lines 24-25) and anti-tuples (Lehman: col. 1, line 27) (Lehman: col. 2, lines 25, 26).

Regarding claim 20, the method of Claim 19 wherein said tuples include a duration parameter for limiting the duration thereof in said tuple space (Lehman: col. 5, lines 35-43; Ahmed: col. 5, line 25; "end time").

Regarding claim 21, the method of claim 20 wherein said duration parameter is a multiple of said discrete time intervals (Ahmed: col. 5, lines 24-38).

Regarding claim 22, the method of claim 21 wherein said tuples are removed from said tuple space after said duration has elapsed (Ahmed: col. 5, lines 30-38).

Regarding claim 23, the method of claim 17 wherein said entities are software processes operating in memory under control of a processor (Lehman: col. 1, lines 58 and 59; col. 4, lines 37-41).

Regarding claim 24, the method of claim 17 wherein said entities are represented by agents (Lehman: col. 5, line 50 – col. 6, line 3; the Handler Factor manages the tuple space and may custom tailor the implementation of the operator's handler to the types of parameters).

Regarding claim 25, the method of claim 17 wherein said communication pathway is a network or bus (Lehman: col. 4, lines 15, 16).

Regarding claim 26,

The Lehman reference teaches a method for providing services in an automated contract environment comprising the steps of (Lehman: col. 3, lines 21-30):

a) providing a communications pathway for transmitting and receiving communications of application entities and service entities (Lehman: col. 2, line 4; col. 3, lines 61-67);

b) providing a tuple space in a shared memory (Lehman: col. 1, lines 12-13), , and connected to said communications pathway (Lehman: col. 1, lines 12-13; col. 2, lines 4-8; col. 3, lines 64-66); and

posting and receiving messages of said application entities and said service entities to and from said tuple space.

The Lehman reference does not explicitly state the use of discrete time intervals.

The Ahmed reference teaches tuple space synchronized with a clock for operation in discrete time intervals, using said discrete time intervals as reference points (Ahmed: col. 5, lines 24-38; clock is the system clock, reference points are start, end, and now).

The Ahmed reference further teaches the start and end times indicate a time interval in which the tuple contains current information (Ahmed: col. 5, lines 24-38)

Therefore it would have been obvious at the time of the invention to one of ordinary skill in the art to create a system for information controlling and exchange as taught by Lehman while employing discrete time intervals as taught by Ahmed to maintain tuples with a temporal attribute to maintain current information (Ahmed: col. 5, lines 24-28).

REMARKS

The Applicant Argues:

The Lehman reference in combination with the Ahmed is extremely dubious. And the Ahmed reference does not teach templates or anti-tuples.

In response, the examiner respectfully submits:

The combination of Lehman and Ahmed teach the tuple space as claimed above. The Lehman reference does effectively teach the tuple space in a shared memory (Lehman: col. 1, lines 12-13) for transmitting and receiving communications of entities (Lehman: col. 2, line 4; col. 3, lines 61-67). The Ahmed reference teaches the limitations of time intervals as claimed. Lehman defines the basic aspect of a tuplespace as a tuple which is a vector of typed values or fields (Lehman: col. 1, lines 24-26). The Ahmed reference uses tuples in the context of a relational database system (Ahmed: col. 1, lines 5-12). The database management system has sets of data tables for storing objects associated with the works in progress (Ahmed: col. 4, lines 35-46). Ahmed does teach the data objects or data tuples are rows of data tables. A row in a database is used to store values like a vector storing values in a tuple. Both Ahmed and Lehman refer to tuples. Ahmed further teaches values are associated with the tuple when changes are made or attributes for the object are added, deleted or modified (Ahmed: col. 3, lines 54-59; col. 5, lines 24-59; see temporal attributes and values). The Lehman reference shows that a tuplespace is a message passing system with a data repository (Lehman: col. 2, lines 25). The Lehman reference shows the field of the invention in a database management system (Lehman:

col. 1, lines 6-10; col. 3, lines 5-11). The Lehmen reference shows the context of tuple spaces in a database environment. Lehmen shows the tuplespace as a message passing system in terms of function but “far below relational database systems, since most implementations do not include transactions, persistence or any signification form of query facility.” All this passage teaches us is that a relational database has more functions and features then a tuplespace but that they are perform the same basic function which is “message passing.” (Lehmen: col. 2, lines 25-37). It would not have been dubious to combine the features of these two references.

With regard to Ahmed not teaching templates or anti-tuples. The Lehmen reference teaches the cited portions. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The Applicant Argues:

With respect to claim 17, the Lehmen reference does not teach a method of call processing or providing entities representative of call processing features.

In response, the examiner respectfully submits:

The Lehman reference does teach a method of call processing and providing entities representative of call processing features. Lehmen teaches clients in a server environment (Lehmen: col. 4, lines 23-41, lines 55- col. 5, line 2) that “issue a write call” to manipulate the tuplespace as well as a “callback” object found in col. 5, lines 12-24. The entities are the clients and server entities “calling” processing of the tuplespace.

The examiner encourages applicant to further detailing claim 17 to include monitoring and conditional responses.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R Bruckart whose telephone number is (703) 305-0324. The examiner can normally be reached on 8:00-5:30PM with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (703) 308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Benjamin R Bruckart
Examiner
Art Unit 2155
brb
October 15, 2004

brb

Hosain Alam
HOSAIN ALAM
SUPERVISORY PATENT EXAMINER